

10/600974

cancel 9-18 by Pre Amtt.

WHAT IS CLAIMED IS:

1. A semiconductor laser device employed in an optical pickup of a 3-beam method that divides one laser beam into three beams by an optical system, said three beams being a 0th-order beam and \pm first order beams, and directs the three beams towards an optical recording medium to detect
5 information recorded on said recording medium and detecting tracking error information during said detection by the 0th-order beam and \pm first order beams reflected from said recording medium,

wherein a reflector is attached on a side beam incident region of a leading end plane of a header portion mounted with a laser chip emitting
10 said laser beam, said side beam being one of two side beams generated by said reflected \pm first order beam and fed back through said optical system returning towards said header portion to strike said side beam incident region, said reflector reflecting said side beam outside said optical system.

2. The semiconductor laser device according to claim 1, wherein said reflector is attached at the leading end plane of the header portion so that a distance between a reflecting plane of said reflector and a light emitting point at an outgoing end plane of said laser chip is at least 50 μm
5 and not more than 150 μm .

3. The semiconductor laser device according to claim 1, wherein said reflecting plane of said reflector is tilted having an angle of at least 10 degrees with respect to a plane perpendicular to a main beam generated by said 0th-order beam and fed back through said optical system.

4. The semiconductor laser device according to claim 1, wherein said reflector has a cross section of a saw-toothed configuration, and includes an inclination plane of a plurality of steps.

5. The semiconductor laser device according to claim 1, wherein said reflector is formed of any one of a synthetic resin and metal.

6. The semiconductor laser device according to claim 5, wherein said synthetic resin includes a thermosetting resin.

7. The semiconductor laser device according to claim 5, wherein said metal includes a metal of a hardness lower than the hardness of the metal forming the header portion.

8. A method of fabricating the semiconductor laser device recited in claim 1, comprising the steps of attaching at said side beam incident region at a leading end plane of said header portion a base material of a reflector formed of a metal that is softer than the metal forming said header portion or a synthetic resin prior to curing, and then shaping said base material into a reflector of a predetermined configuration.

9. A semiconductor laser device having a stem with a semiconductor laser chip mounted, wherein said stem includes a mount plane where said semiconductor laser chip is mounted, and a cross plane crossing said mount plane and facing a laser irradiated body on which a laser beam emitted from said semiconductor laser chip strikes , wherein said cross plane is covered with a reflectance-reducing material reducing the reflectance to said laser beam lower than the reflectance of said cross plane so that an amount of light of said laser beam reflected at said cross plane to be directed towards said laser irradiated body is reduced.

10. The semiconductor laser device according to claim 9, wherein said reflectance-reducing material scatters and/or absorbs said laser beam directed towards said cross plane

11. The semiconductor laser device according to claim 9, wherein said reflectance-reducing material is applied continuously to said mount plane, and a portion of said reflectance-reducing material applied on said

5 mount plane is used as a bonding material to die-bond said semiconductor laser chip to said stem.

12. The semiconductor laser device according to claim 9, wherein a crossing portion of said mount plane and said cross plane is subjected to an R configuration, and said material is applied at a region adjacent to the region of the R configuration.

13. The semiconductor laser device according to claim 9, wherein said reflectance-reducing material includes a conductive die bond paste.

14. The semiconductor laser device according to claim 13, wherein said conductive die bond paste includes an epoxy resin and silver.

15. The semiconductor laser device according to claim 9, wherein said reflectance-reducing material includes at least one type of an epoxy resin and an UV resin, and at least one type of silica and carbon powder.

5 16. An optical pickup comprising: a semiconductor laser device mounted with a semiconductor laser chip; a diffraction grating diffracting a laser beam emitted from said semiconductor laser chip; a beam splitter partially splitting said diffracted laser beam; and a photodetector detecting an intensity of the laser beam split by said beam splitter, wherein the semiconductor laser device recited in claim 9 is employed as said semiconductor laser device.

5 17. The optical pickup according to claim 16, wherein the laser beam emitted from said semiconductor laser chip is divided into three major beams by said diffraction grating, said three major beams including a main beam and two side beams, said three beams being directed to an optical disk and reflected from the optical disk, at least two of said three beams being split partially by said beam splitter, and a split beam detection output is obtained from said photodetector for said two split beams, whereby a

tracking error signal corresponding to a tracking status of said main beam directed to said optical disk is obtained.

18. A method of fabricating a semiconductor laser device including a stem mounted with a semiconductor laser chip, said method comprising the steps of:

- 5 preparing a stem including a mount plane mounting said semiconductor laser chip, and a cross plane crossing said mount plane and facing a laser irradiated body on which a laser beam emitted from said semiconductor laser chip strikes,
- 10 covering said cross plane with a material reducing reflectance to the laser beam lower than the reflectance of said cross plane so that an amount of light of said laser beam reflected at said cross plane to be directed to a laser irradiated body is reduced, and
- mounting said semiconductor laser chip on said mount plane.